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# Photosynthesis - Advanced Vocabulary

## ADP

Adenosine diphosphate is an important organic compound that is essential for the flow of energy in living cells. It is a product of Calvin Cycle formed when ATP is broken.

## ATP

Adenosine triphosphate is the main energy-carrying molecule in living cells. It is a complex organic chemical that provides energy required to carry out many processes.

## Chlorophyll

Chlorophyll is a green pigment found in the thylakoid, that absorbs light

## Chloroplast

during photosynthesis. It is a structural component molecule of chlorophyll. When light is absorbed, it becomes electronically excited, starting the

## Carbon dioxide

of photosynthesis. It is a vital component of plants and algae. It contains carbon and oxygen. It is used for the production of simple

## Stomata

Stomata are the pores of plants used during the process of photosynthesis to take in carbon dioxide from the air and release oxygen. It is the main raw material used to produce glucose.

## Glucose

Glucose is a simple sugar made by plants as an end product of photosynthesis. In plants, glucose is stored as starch and is used when photosynthesis is lacking and also for respiration. It is stored in seeds as lipids and used to make proteins and build cell walls.

## Photosystems

Photosystems are the arrangements of chlorophyll and other pigments packed into the thylakoids.

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## Photoautotrophs

Organisms that carry out photon capture to acquire energy are called photoautotrophs. They fix their own carbon using the light energy.

## Photosynthesis

Photosynthesis is the process of converting light energy into chemical energy. It is the series of chemical reactions that allow plants to harvest sunlight and create carbohydrate molecules. It comprises of two stages, the light-dependent reactions and the dark reactions or the Calvin Cycle. Together these reactions convert carbon dioxide and water to sugar and oxygen.

## Light-dependent reactions

...y to make the energy storage  
... NADPH needed for the next  
...ctions take place in the  
... chloroplasts.

## Calvin Cycle / Dark reactions

...s are chemical reactions that  
... into glucose. These reactions  
...roplast. Chemical processes  
...dent reactions - ATP and  
..., reduction, and regeneration.

## Thylakoids

...sis. It is the inner membrane  
...icles are stacked on each  
...c chemicals.

## Granum

...roplast. The chloroplast  
...alled the grana. The  
...ake place here.

## Stroma

Stroma is the colorless fluid surrounding the grana within the chloroplast. The enzymes involved in the conversion of carbon dioxide to simple sugars are found in the stroma.

It is the site for dark reactions.

## Photophosphorylation

Photophosphorylation is a process of converting energy from a light-excited electron into the pyrophosphate bond of the ADP molecule.

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## Carbon fixation

Carbon fixation is the conversion of inorganic carbon to organic carbon, that happens during the Calvin Cycle or Dark reactions. It is the first stage of the dark reactions.

## NADP

Nicotinamide Adenine Dinucleotide Phosphate acts as an electron carrier during the light-dependent phase of photosynthesis and changes from its oxidized state to its reduced state NADPH.

## Light harvesting complex

It consists of proteins and photosynthetic pigments. It is used by plants to collect more light than would be captured during a photosynthetic

## Thylakoid lumen

ous aqueous phase enclosed ed here from water during sis.

## Mesophyll cells

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und in plant leaves. These

## Palisade cells

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er part of the leaf. They absorb the light energy. Their

## NADPH

Hydrogen plays a vital role g photosynthesis. It is the d fuels the reactions that

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## Guard cells

Surrounding each stomata are a pair of guard cells that regulate the opening and closing of the stomata and facilitate the exchange of gases during photosynthesis.

## Photolysis

Photolysis is the process of breaking down water molecules into hydrogen and oxygen under the influence of light during the light-dependent reactions of photosynthesis.